

WHAT IS CLAIMED IS:

1. A liquid ejection head for ejecting a liquid through an ejection orifice, comprising:

a recording device board including an energy generating device disposed thereon to generate energy for ejecting the liquid through the ejection orifice;

an electrode pad disposed in a recess formed in the recording device board, the electrode pad being electrically communicated with the energy generating device;

an electrode lead for supplying power to the electrode pad externally of the recording device board;

a bump for connecting the electrode pad and the electrode lead to establish electrical communication therebetween; and

a sealing resin material filled in the recess to surround an electrically connected portion between the electrode pad and the bump without covering the bump.

2. A liquid ejection head according to Claim 1, wherein the sealing resin material is a thermosetting resin material having elasticity even after hardening, and another sealing resin material, which is another kind of thermosetting resin material having rigidity after hardening, is applied on the first-mentioned sealing resin material to

cover the bump and the electrode lead.

3. A liquid ejection head according to Claim 1, wherein a portion of the bump electrically connected to the electrode lead is projected from the recess.

4. A liquid ejection head according to Claim 1, wherein the bump is provided in plural on the recording device board, adjacent two bumps are communicated with each other through a communication groove, and at least one of the bumps is communicated with an outer peripheral edge of the recording device board.

5. A liquid ejection head according to Claim 2, wherein the first-mentioned sealing resin material is a thermosetting silicone-denatured epoxy resin.

6. A liquid ejection head according to Claim 1, wherein the last-mentioned another sealing resin material is a thermosetting epoxy resin.

7. A liquid ejection head according to Claim 1, wherein the bump has an affinitive area having affinity with the sealing resin material and formed nearer to a connection surface thereof to the electrode pad, and a repellent area

having a lower affinity with the sealing resin material and formed nearer to a connection surface thereof to the electrode lead.

8. A liquid ejection head according to Claim 1, wherein the bump is formed such that a cross-sectional area of the bump parallel to a principal face of the electrode pad is larger in a portion of the bump nearer to a connection surface thereof to the electrode lead than in a portion of the bump nearer to a connection surface thereof to the electrode pad.

9. A recording device board used in a liquid ejection head for ejecting a liquid through an ejection orifice, and including an energy generating device disposed thereon to generate energy for ejecting the liquid through the ejection orifice with electric power supplied from an electrode lead, the recording device board comprising:

an electrode pad disposed in a recess formed in the recording device board, the electrode pad being electrically communicated with the energy generating device; and

a bump for receiving the electrical power supplied to the electrode pad through the electrode lead externally of the recording device board,

the bump having an affinitive area having affinity with

a sealing resin material and formed nearer to a connection surface thereof to the electrode pad, and a repellent area having a lower affinity with the sealing resin material and formed nearer to a connection surface thereof to the electrode lead.

10. A recording device board according to Claim 9, wherein the bump is formed such that a cross-sectional area of the bump parallel to a principal face of the electrode pad is larger in a portion of the bump nearer to a connection surface thereof to the electrode lead than in a portion of the bump nearer to a connection surface thereof to the electrode pad.

11. A recording device board used in a liquid ejection head for ejecting a liquid through an ejection orifice, and including an energy generating device disposed thereon to generate energy for ejecting the liquid through the ejection orifice with electric power supplied from an electrode lead, the recording device board comprising:

an electrode pad disposed in a recess formed in the recording device board, the electrode pad being electrically communicated with the energy generating device; and

a bump for receiving power supplied to the electrode pad through the electrode lead externally of the recording

device board,

the bump being formed such that a cross-sectional area of the bump parallel to a principal face of the electrode pad is larger in a portion of the bump nearer to a connection surface thereof to the electrode lead than in a portion of the bump nearer to a connection surface thereof to the electrode pad.

12. A method of manufacturing a liquid ejection head comprising:

a recording device board including a nozzle member in which an ejection orifice for ejecting a liquid and a flow passage for introducing the liquid to the ejection orifice are formed, and a supply port supplied with the liquid to be ejected through the ejection orifice;

a flexible film wiring board including an opening in which the recording device board is assembled, and an electrode lead provided near the opening for electrical connection to the recording device board, the flexible film wiring board applying an electrical pulse for ejecting the liquid to the recording device board;

a support member for supporting the recording device board;

a support plate having an opening through which the recording device board and the support member are abutted

with each other, the support plate being interposed between the flexible film wiring board and the support member to support the flexible film wiring board; and

first and second sealing resin materials filled in recessed defined by the opening of the flexible film wiring board, the opening of the support plate, and an outer periphery of the recording device board, the method comprising the steps of:

a first step of fixedly bonding the recording device board to the support member and fixedly bonding the flexible film wiring board to the support plate;

a second step of filling a first sealing resin material, which is a thermosetting resin material having elasticity after hardening, in the recesses, and of filling and hardening the first sealing resin material in a first sealing resin material reservoir formed to surround an electrically connected portion between a bump and an electrode pad provided on the recording device board;

a third step of electrically connecting the electrode pad on the recording device board to the electrode lead of the flexible film wiring board through the bump; and

a fourth step of covering an electrically connected portion between the recording device board and the flexible film wiring board with a second sealing resin material which is a thermosetting resin material having rigidity after

hardening.

13. A method of manufacturing a liquid ejection head according to Claim 12, wherein connection points between the a recording device board and the flexible film wiring board are all electrically connected at a time.

14. A method of manufacturing a liquid ejection head according to Claim 12, wherein connection points between the a recording device board and the flexible film wiring board are electrically connected one by one.